ISSN Online: 3007-1941 ISSN Print: 3007-1933 https://msra.online/index.php/Journal/about

Multidisciplinary Surgical Research Annals
https://msra.online/index.php/Journal/about
Volume 3, Issue 5 (2025)

Tehreem Mukhtar[1], Fatima Tariq[2], Tayyaba Hareem[3], Aliza Ameer[4], Roha Shah[4]
Farwa Rauf[6], Usman Khan[7]

Analyzing Role of Different Kinesiology Taping Techniques in Postural Correction and Sacroiliac Joint Stabilization in Weightlifters

Article Details

Keywords: Kinesiology Taping, Postural Correction, Sacroiliac Joint Stabilization, Weightlifters

Tehreem Mukhtar
Assistant Professor, The Superior University, Lahore, Pakistan
Email;Tehreemmukhtar01@gmail.com
ORCID; 0000-0002-8213-7742

Fatima Tariq
The Superior University, Lahore, Pakistan

Tayyaba Hareem
The Superior University, Lahore, Pakistan

Aliza Ameer
The Superior University, Lahore, Pakistan

Roha Shah
The Superior University, Lahore, Pakistan

Farwa Rauf
The Superior University, Lahore, Pakistan

Usman Khan
The Superior University, Lahore, Pakistan

ABSTRACT

Background: Kinesiology taping is increasingly being seen as a non-invasive therapeutic form of managing a broad spectrum of musculoskeletal and orthopedic disorders. The dysfunction of the sacroiliac joint and postural deviation is the most frequent clinical issue in physically active populations, especially in weightlifters. According to past research, rehabilitation programs which incorporate exercises therapy in conjunction with kinesiology taping are likely to have better results as compared to exercise programs. Objective: This review aims to conduct a comparison of the efficacy of various kinesiology taping methods on the enhancement of postural position and stability at the sacroiliac joint in weightlifters. Methodology: The review article summarizes the results of the literature of the various studies that were undertaken on the role of analyzing various kinesiology taping methods that are aimed at posture correction as well as stabilizing the sacroiliac joint in weightlifters in physically active groups such as athletes and weight lifters. The databases searched are Google scholar, PubMed and Scopus where an evidence-based review was searched. There were studies that cover systematic reviews, diagnostic accuracy studies that involve investigation of SIJ pathology, provocation tests, and conservative management measures such as Kinesio taping. The intensity of pain was measured using Visual Analogue Scale (VAS) or other rating scales. Functional disability measures with valid questionnaire i.e. the Oswestry disability index (ODI).

Results: Pain during movement markedly improved with time in all intervention groups.. Functional disability scores show statistically significant enhancement in KT groups, especially in comparison to exercise-only therapies. Research on postural abnormalities, including forward head posture, rounded shoulder posture, and thoracic kyphosis, indicated enhancements in postural alignment after kinesiology taping therapies. Electromyographic studies found that there were changes in muscle activation with increase in the recruitment of postural and scapular stabilizing muscles because of using kinesiology tape. The neuromuscular changes are related to the positive changes in functions. No substantial negative effects related to kinesiology taping were found.

Conclusion: Evidence shows that kinesiology taping is a promising intervention that can reduce pain and enhancing the efficiency of movement particularly when combined with specific exercise regimes. Although therapeutic exercise is still the key to rehabilitation, kinesiology taping seems to be an adjunct to improve the short-term clinical outcome.

INTRODUCTION:

The issue of postural dysfunction and the linking to pain and joint instability is one of the issues of great concern within a population, including weightlifters. In these physically demanding conditions, a poor posture is easily embraced during training and people would tend to become overly relaxed during the rest periods, which is likely to result in fatigue, stiffness, and spasm of lumbar extensor muscles. Consequently, it becomes more and more challenging to keep the right posture and the normal spine curve. According to Lee et al., inadequate alignment of the spine leads to overcompensation of the postural muscles because of the imbalances in muscle strength, endurance, or power. Such excessive use raises the amount of energy spent and leads to fatigue and pain. Another cause of lower back and pelvic pain in weightlifters that is mostly ignored is sacroiliac joint dysfunction. It is approximated that one out of five adults who is chronically experiencing low back pain has SIJ dysfunction. In most cases the pain is unilateral, sharp and shooting and localized inferomedial to the posterior superior iliac spine as well as in the gluteal, leg, and groin areas.(1)

Postural deviations and dysfunction of the sacroiliac joints are usually treated in a conservative manner. The treatment methods encompass pharmacological management, manual therapy, self-correction methods, muscle energy methods, kinesiology taping (KT) and therapeutic exercise. The current body of literature confirms the medium- and long-term effects of exercise programs in the enhancement of posture and SIJD treatment. An evaluation of evidence-based physiotherapy intervention reveals that the kinesiology taping protocols combined with exercise are superior to the traditional methods that combine electrotherapy protocols with exercise. Kinesiology taping may be administered in various methods which are to enhance the blood and lymphatic flow, alleviate pain, decrease muscle tension and inflammation, ensure functional recovery and prevent injury (2).

Currently, the body of literature on kinesiology taping (KT) is quite inconclusive regarding its contribution to the correction of poor posture and the stabilization of the sacroiliac (SI) joint, primarily in the case of weightlifters. There is also literature on the comparison of different techniques of the use of KT tape underweight bearing conditions. That is why the primary purpose of the review is to investigate and synthesize the existing research materials in order to identify multiple techniques of the K taping or to observe which technique of the taping is more effective in enhancing the posture and to enhance the stability of the SI joint primarily in the cohort of the weightlifters.(3)

Methodology

This review article describes the findings from the literature of the different studies which were conducted on the analyzing role of different kinesiology taping techniques which focuses on the posture correction and sacroiliac joint stabilization in weightlifters in physically active populations, including athletes and weightlifters. This review article examines sacroiliac joint dysfunction, its diagnosis, and the effect of kinesiology taping and exercise-based interventions on SIJ stability and pain reduction. An evidence-based review was searched on databases which include Google scholar, PubMed, and Scopus and it was conducted by keywords such as kinesiology taping, kinesio taping, sacroiliac joint dysfunction, postural correction, pelvic alignment and weightlifters/ athletes. Boolean operators (AND/ OR) were used to clarify search results. Studies included systematic reviews, diagnostic accuracy studies that examine the SIJ pathology, provocation tests, and conservative management strategies including kinesio taping. (4)

By studying the reviewed articles, participants were adults with SIJ dysfunction. Physically active individuals were included in studies addressing sports related SIJ pain and postural patterns. Participants with neurological disorders or prior spinal surgery were excluded. The diagnosis of SIJ dysfunction was based on SIJ provocation tests including distraction, compression, thigh thrust, and Gansler’s test for accuracy of diagnosis. (5)

Conservative management strategies included exercise therapy and kinesiology taping techniques in the reviewed literature. Kinesiology taping was applied with techniques, compared with interventions and evaluating the effect on pain, disability and SIJ function. Taping application was performed by trained clinicians to ensure consistency. Pain intensity was assessed through Visual Analogue Scale (VAS) or similar rating tools. Functional disability assesses using valid questionnaires such as the Oswestry disability index (ODI). Follow up and short-term assessments to evaluate the effectiveness of treatment. Then reassessments were conducted after intervention and allow evaluation of both immediate and short term outcomes.(6)

Literature Review

Weightlifting is a physically demanding sport that significantly strains the spine and pelvic girdle.

Sacroiliac joint (SIJ) which is the key in distributing loads between upper body and lower limbs is especially susceptible during repetitive tasks of lifting. Malfunction or instability of such a joint may cause changes in the biomechanics, poor posture, as well as deteriorated athleticism. Kinesiology taping (KT) has thus become a popular intervention method among clinicians and sports therapists that is perceived to enhance neuromuscular control, alignment and joint stability by a non-invasive taping intervention. The hypothesized mechanisms of action are the promotion of the proprioceptive feedback, activation or prevention of particular muscle groups, the increase in local circulation, and reduction of pain.

To obtain a particular therapeutic effect, various types of configurations have been created, such as I-strips, Y-strips, fan-shaped taping, and ligament support application. Although KT has been widely used clinically in sports medicine, there is a gap in literature of establishing comparative effectiveness of these techniques in the enhancement of posture and SIJ stabilisation, especially in weightlifters.

Although the effects on the short-term increase of functionality, biomechanics, and muscle activity have been reported, the long-term and sport-specific effects are still not clearly determined. This gap demonstrates the necessity of additional studies on the effect of various kinesiology taping methods on the stability of the sacroiliac joint and postural mechanics of the high-load training athletes.

Sacroiliac joint dysfunction (SIJD) is a popular cause of persistent lower back pain and is approximated to occur in one out of every four patients with intractable pains. The condition is usually unilateral, dull or sharp pain which might extend to the buttock, lateral thigh, groin or the region inferior to the posterior superior iliac spine. Kinesiology taping has been suggested as one of the supporting treatments to achieve better blood and lymphatic flow, decrease muscle tension, swelling and pain, enhance neuromuscular re-training, speed up recovery and prevent further injury.

Kinesio taping could be combined with physical therapy to help people with postural kyphosis to improve the quality of life, the kyphotic curvature, chest expansion, and forward head position. These findings suggest that Kinesio taping can be used as an added supplement in the management of postural kyphosis. The tape utilizes this property of the tape in correcting the misaligned muscles created by a pulling force on the target muscles. The majority of the studies performed up to date were only trying to prove that taping can be effective in alleviating muscle soreness and other such areas of the bone.

Forward head posture (FHP) has been identified as a commonly occurring postural issue in some professional groups like dentists owing to long-term spinal imbalances in their work environment. Postural neuromuscular dysfunctions tend to be the product of multiple links between joints, muscles and nerves. It has been done that the kinesiology taping of the cervical area can enhance active range of motion and decrease neck discomfort. KT can be helpful when applied together with corrective exercise programs and help to improve the postural outcome and provide long-term spinal alignment.

Mechanical neck dysfunction (MND) is also commonly associated with axio-scapular muscle exhaustion, a highly prevalent issue in the world. Poor posture, muscle imbalance and abnormal neuromuscular control are the major causes of the duration of symptoms and functional limitations experienced by the affected persons. Traditionally, postural correction methods, particularly exercise-based methods have been used in the rehabilitation regimens of MND. Nevertheless, kinesiology taping (KT) has gained growing clinical and scientific attention within the past years because of its potential to enhance postural positioning, ease muscle contraction, and reduce pain. New studies have suggested that KT can have similar or even better functional outcomes and neck impairment changes compared to traditional postural training therapies.

Kinesiology taping can be used in conjunction with physiotherapy and provide some extra advantages to patients with postural disabilities, such as enhanced kyphosis, forward head position, chest enlargement, and quality of living. The results are in line with the rest of the literature that lends support to the idea that KT works better as a component of comprehensive physical therapy programs. Despite the positive outcomes of the current research, the question of the sustainability of these effects over the long term needs to be addressed with the help of additional research, involving more varied populations and longer follow-ups.

In conclusion, the research shows that kinesiology taping may increase the stability of the sacroiliac joint and posture in athletes prone to overloading of the mechanical stresses like the weightlifters. These mechanisms include proprioceptive facilitation, neuromuscular activation and biomechanical support are components of the mechanisms by which the various KT techniques convey the potential benefits which have been accompanied by conflicting information regarding which of the treatments convey the greatest functional benefits.

Results

Primary outcomes compared included level of pain, impairment of the functioning and postural stability or muscle activity. Quantification of pain was commonly done with the Visual Analogue Scale (VAS) and functional disability with validated questionnaires such as the Oswestry Disability Index (ODI) or region-specific disability questionnaires. Postural outcome was measured on a clinical basis utilizing clinical observation, electromyographic (EMG) activity or accelerometer-based posture measurement. The studies of sacroiliac joint dysfunction reveal that a combination of kinesiology taping (KT) with exercise treatment produces greater reductions in resting pain than exercise treatment. Even though all the intervention groups showed significant improvement in pain during movement with time, the differences in movement related pain across the groups were not always significant. The statistically significant improvement in the functional disability scores in KT groups was particularly evident when compared with the exercise-only therapies. Studies of postural abnormalities such as forward head, rounded shoulder and thoracic kyphosis showed improvement of the postural positioning following kinesiology taping treatments. These improvements often were accompanied by a reduction in the intensity of pain and an increase in muscle activation pattern and this was achieved especially in the use of the tape alongside structured physical therapy programs. Electromyographic studies indicated that there was a change in muscle activity with increased recruitment of postural and scapular stabilizing muscles after the use of kinesiology tape. The neuromuscular changes were associated with functional improvement, but the experiments did not measure athletic performance and long-term adaptations. None of the studies revealed any major negative outcomes in relation to kinesiology taping and the adhesiveness of participants to taping and exercise programs was high.

Discussion

The articles consulted indicate that kinesiology taping is clinically beneficial in a short term when applied together with exercise or corrective posture programs. Reduction in pain intensity particularly at rest was the most consistent result in all the studies in individuals with dysfunction of the sacroiliac joint and postural abnormal. The KT-assisted therapies were also beneficial in terms of functional disability outcomes. A study that employed the Oswestry Disability Index and similar measures found out that individuals that received kinesiology taping together with exercise recorded better improvements in their daily functional activities compared to those that had undergone an exercise. However, the improvement was observed in all the groups, and this demonstrates that exercise is a necessary component of conservative treatment. The cited articles support the effectiveness of kinesiology taping in improving the postural position and neuromuscular control. EMG and accelerator research findings have shown that tape can influence muscle activity patterns and conscious awareness of position so that short term alignment correction can be achieved. The reviewed studies have no trace of long-term postural adaptation or biomechanical stability. The literature shows that some of the taping procedures (ligament correction, lymphatic correction, I-strips, Y-strips) were effective in specific regards but none of them showed consistent performance (good or poor) in all metrics. The benefits being reported appear to be specific to the outcomes as opposed to prevailing by technique.

Conclusion

Kinesiology tapes have shown short-term effectiveness in relieving pain and improving functional impairment and posture when used with either a therapeutic exercise program or a postural correction program. It seems that the evidence shows that kinesiology taping is a safe and acceptable supplementary intervention, but not a standalone treatment. The researched works do not provide any data on long-term effects, the improvement of athletic performance, or the effectiveness of one type of tapes over another. Kinesiology taping can be considered as an aiding clinical tool that can contribute to the positive outcomes of short-term rehabilitation of individuals with dysfunction of the sacroiliac joint or postural deviations.

References

1. Liu Y, Kim M. Effect of taping on posture of thoracic region in patients with thoracic kyphosis using acceleration. Journal of Back and Musculoskeletal Rehabilitation. 2024;37(2):269-76.
2. Tur BS, Karacif D, Ay S, Gökmen D, Ozdemir EC, Evcik D. Exercise and two different kinesio taping techniques in patients with sacroiliac joint dysfunction: A randomized controlled trial. TURKISH JOURNAL OF PHYSICAL MEDICINE AND REHABILITATION. 2024.
3. Ahmed A. Investigating the Effectiveness of Kinesiology Tape on Joint Proprioception and Muscle Activity: Khalifa University of Science; 2021.
4. Simopoulos TT, Manchikanti L, Singh V, Gupta S, Hameed H, Diwan S, et al. A systematic evaluation of prevalence and diagnostic accuracy of sacroiliac joint interventions. Pain physician. 2012;15(3):E305.
5. Peebles R, Jonas CE. Sacroiliac joint dysfunction in the athlete: diagnosis and management. Current sports medicine reports. 2017;16(5):336-42.

Gartenberg A, Nessim A, Cho W. Sacroiliac joint dysfunction: pathophysiology, diagnosis, and treatment. European Spine Journal. 2021;30(10):2936-43.